



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,844	10/29/2003	Raphael Duval	PET-1802 D2	2492
23599 7590 04/15/2009 MILLEN, WHITE, ZELANO & BRANIGAN, P.C. 2200 CLARENDON BLVD. SUITE 1400 ARLINGTON, VA 22201				
EXAMINER				
HENRY, MICHAEL C				
ART UNIT		PAPER NUMBER		
1623				
MAIL DATE		DELIVERY MODE		
04/15/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/694,844

Applicant(s)

DUVAL, RAPHAEL

Examiner

MICHAEL C. HENRY

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 1, 6-12, 14 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-5, 13, 15, 18 and 20-23 is/are rejected.
- 7) ☒ Claim(s) 17 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

The following office action is a responsive to the Amendment filed, 12/19/08.

The amendment filed 12/19/08 affects the application, 10/694,844 as follows:

1. Claims 2, 13, 18, 20, 21, 22 have been amended. New Claim 23 has been added.

Claims 1, 6-12, 14 and 16 are withdrawn. Applicant's amendments have overcome the rejections made under 35 U.S.C. 112, second paragraph and under 35 U.S.C. 103(a).

However, a new ground(s) rejection set forth herein.

2. The responsive to applicants' arguments is contained herein below.

Claims 1-23 are pending in the application.

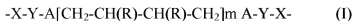
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5, 13, 15, 18, 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al. (US 5,574,023).

In claim 2, applicant claims a support material consisting essentially of a cross-linked polymer compound in a three-dimensional network, comprising a radical of general formula (I) or (II):



where X represents an oxygen atom or the group -NH, m is an integer other than zero equal at most to 5, R represents a hydrogen atom or a substituted or non-substituted, linear or branched alkyl radical having from 1 to 8 carbon atoms, Y represents a -NH-CO-group, -NH-CS group or -CO-group, A represents a single bond, a linear or branched alkylene radical having from 1 to 21 carbon atoms, an arylene radical having from 6 to 18 carbon atoms or an aralkylene radical having from 7 to 40 carbon atoms, L represents a bis-thioether radical, of general formula (IIIa), bis-sulphoxide radical of general formula (IIIb), or bis-sulphone radical, of general formula (IIIc), or a bis-silane radical of general formula (IV), below: Claims 3-5 are drawn to said support material wherein the support material is of specific form or shape, specific % or wherein the support material obtained from specific source. Claim 13 is drawn to a percolation membrane comprising a cross-linked polymer compound in a three-dimensional network, comprising a radical of general formula (I) or (II).

Shibata et al. teach cross-linked polymer compound (polysaccharide or 1→3)-β-D-glucans) (see abstract, claims and table 2, col. 18). Furthermore, Shibata et al. disclose a cross-linked polymer compound (polysaccharide), 2, 3, 4-Trihydroxyadipodialdehyde-crosslinked hydrazinocurdlan (see table 2, col. 18). In addition, Shibata et al. disclose that crosslinking agents which can be used to crosslink their compounds ((1→3)-β-D-glucans) can include adipodialdehyde, adipodihydrazide and adipic acid (see col. 8, lines 12-26). Also, it should be noted that when adipic acid is used as crosslinking agent then the adipic acid radical would correspond to the applicant's radical of general formula (I) wherein X represents the group oxygen atom, m is an integer = 1, R represents a hydrogen, Y represents a -CO- group and A represents a single bond. It should be noted the examiner gives little weight to the intended use

of the composition since it is well settled that "intended use" of a composition or product, e.g., support material, does not further limit claims drawn to a composition or product. See, e.g., *Ex parte Marsham*, 2 USPQ2d 1647 (1987) and *In re Hack* 114, USPQ 161. It should also be noted that crosslinked polysaccharide are commonly used as support materials.

The difference between applicants claimed compound or composition and the compound or composition of Shibata et al. is that radical of general formula (I) of applicant's compound or composition is not substituted with three hydroxyl groups whereas the radical of Shibata et al.'s compound or composition is substituted with three hydroxyl groups. However, Shibata et al. teach that the radical can be an adipodialdehyde or adipodihydrazide and that the 2, 3, 4-Trihydroxyadipodialdehyde or 2, 3, 4-Trihydroxyadipodialdehyde groups can be used to render the compound more water-soluble or hydrophilic (see col. 8, lines 12-34). Also, Shibata et al. teach that the crosslinking agent or radical can be an adipic acid.

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made, in view of Shibata et al., to have prepared any compound suggested by Shibata et al. such as adipodialdehyde-crosslinked hydrazinocurdlan having a radical of the general formula (I), in order to use them as biological agents such as antitumor agents.

One having ordinary skill in the art would have been motivated, in view of Shibata et al., to have prepared any compound suggested by Shibata et al. such as adipodialdehyde-crosslinked hydrazinocurdlan having a radical of the general formula (I), in order to use them as biological agents such as antitumor agents. It should be noted that the use of different form or shape, specific % or specific source (as recited in claims 3-5, 13) depends on the factors such as the process in which the agent is being used and is well within the purview of a skilled artisan.

In claim 15, applicant disclose a support material according to claim 2, wherein the radical of general formulae (I) or (II) is bound to at least one osidic chiral unit of a linear, branched or cyclic linkage of a polysaccharide or oligosaccharide derivative according to the general formulae (VII) and (VIII).

Shibata et al. teach cross-linked polymer compound (polysaccharide or 1→3)-β-D-glucans) (see abstract, claims and table 2, col. 18). Furthermore, Shibata et al. disclose a cross-linked polymer compound (polysaccharide), 2, 3, 4-Trihydroxyadipodialdehyde-crosslinked hydrazinocurdan (see table 2, col. 18). In addition, Shibata et al. disclose that crosslinking agents which can be used to crosslink their compounds ((1→3)-β-D-glucans) can include adipodialdehyde, adipodihydrazide and adipic acid (see col. 8, lines 12-26). Also, it should be noted that when adipic acid is used as crosslinking agent then the adipic acid radical would correspond to the applicant's radical of general formula (I) wherein X represents the group oxygen atom, m is an integer = 1, R represents a hydrogen, Y represents a -CO- group and A represents a single bond. It should be noted the examiner gives little weight to the intended use of the composition since it is well settled that "intended use" of a composition or product, e.g., support material, does not further limit claims drawn to a composition or product. See, e.g., *Ex parte Marsham*, 2 USPQ2d 1647 (1987) and *In re Hack* 114, USPQ 161. It should also be noted that crosslinked polysaccharide are commonly used as support materials.

The difference between applicants claimed compound or composition and the compound or composition of Shibata et al. is that radical of general formula (I) of applicant's compound or composition is not substituted with three hydroxyl groups whereas the radical of Shibata et al.'s compound or composition is substituted with three hydroxyl groups. However, Shibata et al.

teach that the radical can be an adipodialdehyde or adipodihydrazide and that the 2, 3, 4-Trihydroxyadipodialdehyde or 2, 3, 4-Trihydroxyadipodialdehyde groups can be used to render the compound more water-soluble or hydrophilic (see col. 8, lines 12-34). Also, Shibata et al. teach that the crosslinking agent or radical can be an adipic acid.

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made, in view of Shibata et al., to have prepared any compound suggested by Shibata et al. such as adipodialdehyde-crosslinked hydrazinocurdlan having a radical of the general formula (I), in order to use them as biological agents such as antitumor agents.

One having ordinary skill in the art would have been motivated, in view of Shibata et al., to have prepared any compound suggested by Shibata et al. such as adipodialdehyde-crosslinked hydrazinocurdlan having a radical of the general formula (I), in order to use them as biological agents such as antitumor agents. It should be noted that the use of different form or shape, specific % or specific source (as recited in claims 3-5, 13) depends on the factors such as the process in which the agent is being used and is well within the purview of a skilled artisan. Claims 18, 20-23 which are drawn to said composition or support material consisting essentially of a cross-linked polymer compound in a three-dimensional network, comprising a radical of general formula (I) or (II) are also encompassed by this rejection. Claims 17 and 19 are objected to as being dependent upon a rejected base claim.

Response to Arguments

Applicant's arguments with respect to claims 2-5, 13, 15 and 17-23 have been considered but are moot in view of the new ground(s) of rejection.

The Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Henry whose telephone number is 571-272-0652. The examiner can normally be reached on 8.30am-5pm; Mon-Fri. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael C. Henry
April 12, 2009.

/Shaojia Anna Jiang/
Supervisory Patent Examiner
Art Unit 1623